NAVAL WAR COLLEGE
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JFACC's Afloat: Improvements and Applications

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations.

The contents of this papaer reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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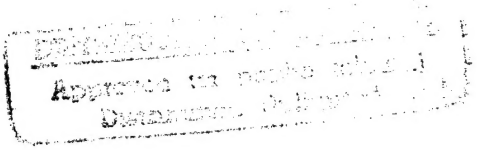

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15.Abstract:

In OPERATION DESERT STORM, the U.S. Navy's carrier aviation was limited by its inability to communicate and contribute to the Joint Force Air Component Commander (JFACC). In the five years since that operation, the Navy has made tremendous strides in upgrading its connectivity with JFACC's worldwide. Modifications to aircraft carriers and command and control ships have provided platforms that can support JFACC's afloat. Their use in numerous joint exercises has shown their potential contribution to the Joint Force Commander for basing the controller of his air operations plan. This paper defines the sea-based JFACC, discusses its limitations, and proposes some scenarios for its utilization.

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ABSTRACT

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I. Introduction

An afloat Joint Force Air Component Commander (JFACC) offers the Joint Force Commander (JFC) a unique planning tool when preparing for joint operations. The use of the JFACC concept to support a JFC objectives worked extremely well in Operation Desert Storm. The "air campaign was coherent and focused, seized the initiative, and created the conditions for the collapse of Iraq's military." [1] Carrier aviation's inability to effectively receive the JFACC's Air Tasking Order (ATO) severely hampered its ability to employ 25 percent of the conflict's strike aircraft.[2] This missing link also caused a disconnect for hit assessment on naval aviation's tank killing success with laser guided weapons.[3] In the five years since the Gulf War, the Navy has made great strides in improving its connectivity with the Air Force concept of air operations through a JFACC. This realignment has included shipboard upgrades, training for JFACC staffs, and at-sea operations to test deploying forces' interoperability for joint air operations throughout the world.

The improvements have changed the way air operations at sea are planned and published within a Carrier Battle Group (CVBG). They have also lead to a published and practiced plan of basing of a JFACC afloat on Aircraft Carriers (CV(N)'s) and Command and Control ships (LCC's) for various levels of flight operations. Are these improvements significant enough to ensure the Navy's continued support for joint operations in any future conflict?

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[1] Deputy Chief of Staff, Plans and Operations, Headquarters, United States Air Force, JFACC Primer. (Washington, D.C.: August 1992), 8.

[2] Thomas A. Keaney and Eliot A. Cohen, Revolution in Warfare? Air Power in the Persian Gulf (Annapolis, MD: Naval Institute Press, 1995), 127.

[3] Richard C. Lewis, "Desert Storm - JFACC Problems Associated with Battlefield Preparation". Published paper by the US Army War College, (Carlisle Baracks, PA, April 1993), 18.

2. JFACC Description

The scope of air operations within a JFC's area of operations will determine the need for a JFACC. If required, the JFC will normally designate the "component commander having the preponderance of air assets and the capability to plan, task, and control joint air operations"[4] as the JFACC. The JFACC is responsible for developing a joint air operations plan that will support joint force objectives, and he also may be required to design airspace control procedures as Airspace Control Authority and integrated air defense as Area Air Defense Commander. The primary tool of his trade is the ATO cycle which takes 48 hours to plan and 24 hours to execute. The procedure is based on a six step process displayed in Fig. 1.[5]

ATO Planning Process

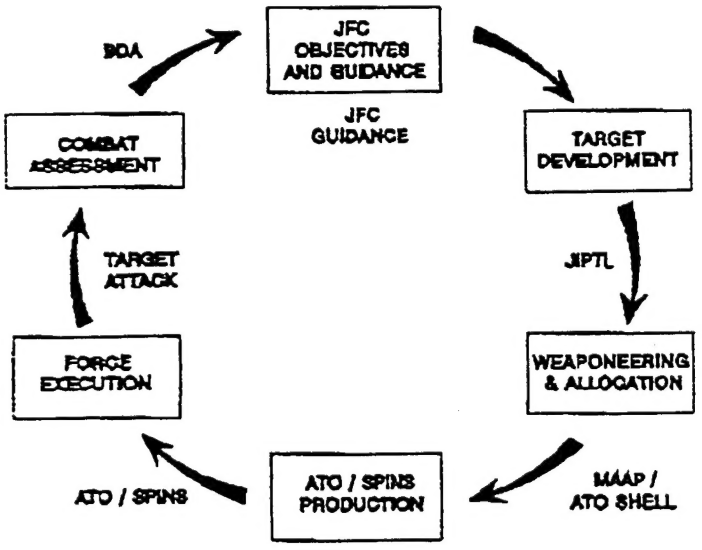

Figure 1.

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[4] Joint Chiefs of Staff, Command and Control for Joint Air Operations. JP 3-56.1. (Washington, D.C. November, 1994), II-2

[5] "JFACC: A Naval Perspective", Naval Strike Warfare Center Executive Seminar Notebook, April 1996 ed. (Naval Strike Warfare Center, NAS Fallon, NV), E-2.19

The first step reviews the JFC's targeting priorities and apportionment of air assets to the present phase of objectives. The second step is the JFACC's building of a Joint Target List (JTL) which will be folded into the Joint Integrated Prioritized Target List (JIPTL) for all component commanders. The third step is completed by the weaponeers of a JFACC's Combat Plans division. This group details aimpoints, weapons desired, and recommended platforms to formulate a Master Air Attack Plan (MAAP). Once the MAAP is approved by the JFACC, an ATO is built from the available aircraft sorties submitted by each unit. The fifth step is force execution which is run by the JFACC's Combat Operations division. A Joint Air Operations Center (JAOC) within this division monitors the present day's ATO and redirects operations for changes in the battlefield situation. The last step of the cycle is a combat assessment of the day's flight operations. Once air operations escalate to the striking of enemy targets, this step becomes the most critical in achieving the air power objectives. A careful review of bomb hit assessment, munitions effectiveness, and imagery builds target recommendations for a JFACC to bring to JFC's daily meeting of the Joint Targeting Control Board for the JFC's review. The results of this forum start the cycle back to step one.

3. Naval Continuum

New hardware and doctrine have allowed the Navy to support JFACC operations at multiple levels. With the shipboard installation of the SHF Contingency Theater Automated Planning System (CTAPS), a sea-based JFACC continuum was established. This continuum begins with a CV(N) and expands to an LCC for larger operations. This sea-basing of JFACC's can also serve as a preparation for transitioning to a shorebased JFACC if air

operations escalate beyond a ship's capability. The JFACC continuum levels and force support are listed in Figure 2.[6]

SEA-BASED JFACC CONTINUUM

Level I	Level II	Level III	Level IV
CV Enabling JFACC	CV Augmented JFACC	LCC JFACC	JFACC Ashore
(20 Pers.)	(60 pers.)	(20 add'l targeteers)	
1 CVBG/ARG	2 CVBG's	2-3 CVBG's	>3 CVBG's
1 AF Wing	1 ARG	2 ARG's	2 ARG's
	1 AF Wing	2 AF Wings	2 AF Wings
< 200 sorties Per Day	<400 sorties Per Day	<800 sorties Per Day	1400 sorties Per Day
12 CTAPS	14 CTAPS	As installed	As required
20 PHONES	30 PHONES		
1000 sq. ft.	1500 sq. ft.		

Figure 2.

A Level I JFACC is considered an Enabling JFACC because it can conduct joint operations on a limited basis with key personnel from a CVBG staff. This staff requires no additional personnel and can conduct routine flight operations for a CVBG, an ARG, and one composite Air Force Wing. A Level II JFACC is augmented by 40 personnel from their respective coasts who serve as the "flyaway" staff for increased operations. This group contains approximately 20 aircrew and 20 Intelligence/CTAPS personnel in order to accommodate up to 400 sorties per day.[7] A baseline organization and manning distribution for Levels I and II JFACC's are shown in Appendix A.

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[6] Naval Doctrine Command, Joint Force Air Component Commander Organization and Processes NWP 3-56.1. (Norfolk, VA April, 1996), 3-2 and NSWC Executive Seminar Notebook E 2.19.

[7] Chief of Naval Operations (N51D), Sea-Based JFACC Briefing Slides (Washington, D.C.: April 1996).

A level III JFACC would be required for escalated operations without a shore base of opportunity. The level of communications and manning required dictate the use of an LCC which can accommodate up to 800 sorties per day. These two platforms can be used for extended command and control at sea for both JFC's and JFACC's. Their communications packages and proximity of JFACC spaces to the command module have worked well for numerous joint operations, which will be discussed in later chapters. The USS Mount Whitney (LCC 20) is based in Norfolk, Virginia, and it serves as the flagship for the Commander, Second Fleet. The USS Blue Ridge (LCC 19) is based overseas at Yokosuka, Japan, and it serves as the flagship for the Commander, Seventh Fleet. With the exception of training exercises that will be discussed, these flagships do not normally deploy along with CVBG's or ARG's. They can however, be made readily available for a JFC's use in response to a crisis situation. If air operations grow to Level IV proportions, then the JFACC staff must be transferred ashore. This transfer must be completed without any breaks in the ATO planning process. Naval air forces then become part of the supporting group to the shorebased JFACC. A notional JFACC organization for an LCC type organization is shown in Appendix B. Operating from a sea-based JFACC places numerous demands on shipboard working spaces, communications equipment and berthing accommodations. The prerequisites for employing an afloat JFACC are shown in Appendix C. As of May, 1996, the 11 active CV's and 2 LCC's have CTAPS conversions which are completed or in progress. The two flagships for the Third (San Diego, CA) and Sixth (Gaeta, Italy) Fleets are converted amphibious ships whose CTAPS capabilities are being blueprinted for future modification.

4. Exercises

Joint exercises have been the key to the implementation of afloat JFACC's, and naval aviation has taken every opportunity to participate. Examples of recurring exercises that are built around the use of joint air forces employed through a JFACC are Ocean Venture (Atlantic), and Tandem Thrust (Pacific). These joint exercises simulated combat operations near continental U.S. and overseas. The exercises that were conducted in 1992 (Ocean Venture 92 and Tandem Thrust 92) dual-hatted the JFACC with the Air Force component commander, and they provided a large amount of JFC and JFACC training. One of the most valuable lessons was the requirement to understand all steps of the JFACC process as well as the need for contributing knowledgeable liaison officers to the JFACC staff.[8] Follow on exercises (Ocean Venture 93, Tandem Thrusts 93, 95) further defined Navy JFACC capabilities by moving the JFACC's to newly-configured LCC's and CV's. These large scale exercises provided a real learning process for staffs on the training and equipment requirements for afloat JFACC's. These lessons were then assimilated into a concept of operations for both the Atlantic and Pacific fleets.[9]

The largest Navy change in incorporating JFACC into air operations has been the conversion of a battle group's last pre-deployment training period into a Joint Forces Exercise (JTFEX). This two week exercise involves over 20,000 personnel with elements from all

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[8] Center For Naval Analyses, The Navy and the JFACC: Making Them Work Together. (Alexandria, VA.: 1993), 34.

[9] Center For Naval Analyses, Analysis of Joint Force Air Component Commander and Joint Targeting in Exercise OCEAN VENTURE 93. (Alexandria, VA.: 1995), 59.

services, and it directly tests sea-based JFACC Levels I through III. A littoral scenario is conducted near U.S. airfields and naval bases which include air interdiction, battlefield preparation and ground assault. The timeline for these graded events are shown in Fig. 3.[10]

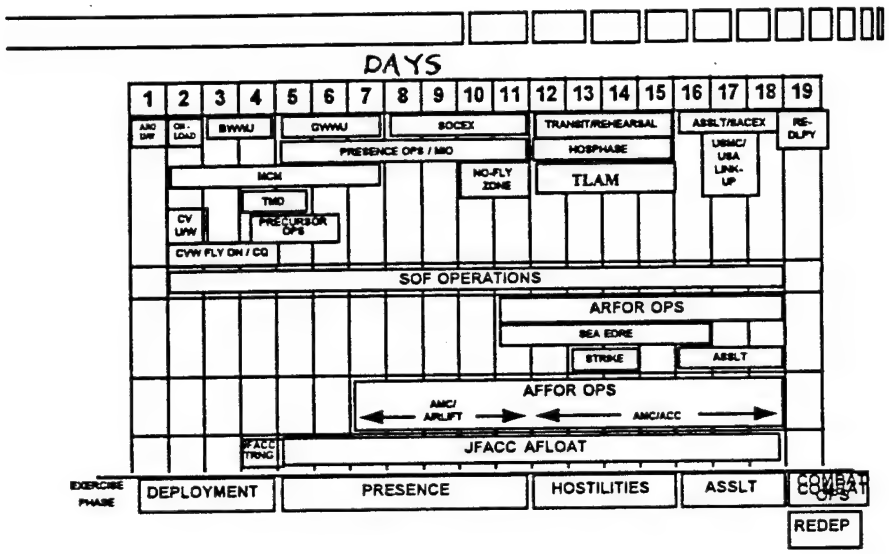

Figure 3.

The last 6 deploying battle groups have used this exercise as a valuable training opportunity to be ready to work with or act as a JFACC while forward-deployed.

This exposure to joint forces has changed the standard planning process aboard many deploying battle groups. CV Operations departments are conducting planning and schedule dissemination under the JFACC's ATO timetable regardless of their type of operation.[11] These are all being conducted to always be ready to support no-notice joint operations.

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[10] Commander, Second Fleet (Joint Task Force 950) CJTFEX 96 Operations Order. (Norfolk, VA.: 15 February, 1996).

[11] Fleischman, Charlie, CDR, USN. COMSECONDFLT Assistant Air Operation Officer, N342/J916 Phone interview. (Norfolk, VA.: May, 1996).

5. Limitations

Today's limitations on Navy JFACC's are related to hardware, training and shipboard space. The incentive to adapt to a JFACC concept of operations at sea originated from the Desert Storm experience and the force reductions of the early 1990's. Making the Navy JFACC-capable required the installation of the SHF CTAPS system aboard ship to receive or write an ATO. An incompatibility of the Navy's Hewlett-Packard computers with the Air Force SUNSPARC system required the writing of a compatible software program (SUN Operating System 5.11).[12] Every planning module listed in Appendix C has limitations that require a great deal of manual entry for aircraft weapon's capabilities, targeting tools, and ATO building. An updated variant (5.2 release) will be installed in FY 97 that will make the planning tools more "user friendly", however, the data base entry for intelligence information remains a time-consuming problem. A long term solution being studied is the feasibility of directly linking CTAPS with the enemy orders of battle formatted in the Joint Maritime Communication Information System (JMCIS). The capability is being researched for inclusion into the Global Command and Control System (GCCS), which begins operations in the late 1996.[13] Continued technological upgrades in the CTAPS system will be subject to funding constraints, but they will be an important part of the sea-based JFACC's ability to rapidly communicate information to his JFC.

JFACC training for afloat staffs has been another limiting factor aboard aircraft carriers. The Enabling JFACC listed in Appendix A. comes from permanently assigned

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[12] Whitcopf, Robert, CDR, USN. Chief of Naval Operation (N62J), JMCIS/Afloat Systems Division. Phone interview. (Washington, D.C.: April, 1996).

[13] Bailey, Cozy, LTCOL, USMC. Joint Staff Officer (J6V), Global Command and Control Systems Division. (Washington, D.C.: May 1996).

personnel aboard the CV and the Flag/Airwing staffs. Liaison officers from other participating services can be flown aboard, but the representatives from battle and readiness group squadrons will be provided by the aviation units onboard. During extended flight operations that require a great deal of air/sea control or alerts, the loss of aircrews to act as liaison officers can have an impact on unit readiness. The use of organic aircrews for JFACC staffing is viewed as a direct drain on CVBG and ARG power projection capabilities, and avoidance of this temptation has been emphasized in every level of command.[14] Training an Enabling JFACC staff has often been conducted on the job during underway periods. All CTAPS and JFACC schools are offered at Hurlburt AFB, Fla. and Maxwell AFB, Ala. which limits access to battle group personnel. The Intelligence and Operation Specialist ("IS" and "OS") ratings have been manning CTAPS with little experience or training on Navy-specific machines. Future plans, however, for designating CTAPS operators under the Navy Enlisted Classification (NEC) system will help alleviate the manpower and inexperience problems faced by most battle groups. Future plans must bring these courses closer to these afloat unit's homeports through the Tactical Training Groups. JFACC working space aboard a carrier becomes a limitation when operating an augmented JFACC at Level II.[15] The CTAPS location on aircraft carriers have varied from flagbridge superstructures to intelligence centers to empty squadron ready rooms. The lack of "room to spread out" in the work space can become a limiting factor for the JFACC staff efficiency as the tempo of operations and the need for CTAPS / secure phones increases. The additional berthing for a flyaway staff on a deployed CV can also place a real burden on a fully-manned

[14] NWP 3-56.1, 3-1.

[15] Warneke, John, CDR, USN, Commander Carrier Group ONE (N32), Air Operations/Plans.

ship and airwing. This problem, however, has existed for every major capability addition to combatant ships which have occurred after their original design. Without conducting any costly ship alterations, the only apparent solution to this dilemma will be staff manpower reduction through increased automation of planning and execution tools.

6. Operational Issues

"Aircraft are the only major weapons that transcend services boundaries".[16] They have joined offensive and defensive missiles to make the skies an important part of any forces battle plan. Relatively few aircraft are required to kill small point targets with precision weapons, but the present U.S. method of air control against any adversary is to arrive with vastly superior numbers. The many different types of specialized aircraft missions and the multiple services required to support most air operations often drives the decision to designate a Joint Force Commander. Most combat air sequence plans include airspace control followed by air interdiction, and when ground forces are used, they provide air support. Also, the number of air assets required for operations other than war may rival those of combat operations. A JFACC is used to ensure that the combined effort of a large group of air assets is employed in a synergistic method, and he accomplishes this through a Joint Air Operations Plan.[17] A vital part of this plan is determining the most important targets that will affect the enemy's center of gravity. Once combat operations begin, his role of providing valid targeting recommendations to a Joint Targeting Coordination Board is critical to the force's success.

Telephone interview. (San Diego, CA.: April, 1996).

[16] James M. Spence, "Naval Doctrine Issues for the Joint Force Air Component Commander (JFACC)"

An intrinsic ingredient to this recommendation is accurate intelligence of the enemy's capabilities and the effect that friendly fires are having on those capabilities. Desert Storm analyses revealed that the intelligence division assigned to the JFACC was not always the central collection point for satellite imagery, intelligence sources, and aircrew mission reports. Sources from Washington were being used directly by those making targeting and apportionment decisions, not from the Intelligence officers tasked with the collection of such information.[18] Inaccurate estimates of enemy strength can result in the loss of momentum through overtasking, or they can place friendly forces at excessive risk. A shipboard environment where a JFC is collocated with a JFACC shares a great deal of intelligence information due to the size of the working spaces and the limited number of personnel available. This may help keep all levels of the decision-making process informed, but it can reduce the overall intelligence and targeting process if the demand exceeds the staffs capability. JFACC's have historically been conducted ashore from a secure suitable location. Maritime JFACC's could be considered when naval forces provide the preponderance of air capability, secure land facilities with sufficient infrastructure are unavailable, or ground support forces are required to withdraw from hostile territory.[19] Modern satellite communications and video teleconferencing have provided a substantial capability to command and control deployed forces from almost any worldwide command post. With the long reach and reliability of these systems, consideration may be given to distant-basing the JFACC without the prerequisite land sight. A JFACC, however, is a decision-maker for joint

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Published research paper by the U.S. Naval War College, (Newport, RI: March, 1994),113.

[17] Joint Pub 3-56.1, III-6

[18] Richard C. Lewis, 15.

[19] Joint Pub 3-56.1, II-8

air operations, and it will always provide better air operational control if located in close proximity to the JFC, even if that means within the same battle group.

7. Sea-Based Applications

Many political scenarios have happened in recent years that produced an immediate show of force by the U.S. military. When uprisings in coastal countries occur with vital U.S. interests at stake, a forward deployed CVBG or Amphibious Readiness Group (ARG) can be detached to the area in a matter of days. Local operations by these groups usually provides a strong message which backs diplomatic negotiations with these countries. The ability to operate for extended periods in international waters relieves diplomatic pressures on nearby countries who do not wish to be drawn into hostilities. An afloat JFACC can be established afloat for air operations that are used to influence a belligerent nation, or as a temporary measure if air operations are expected to grow beyond afloat capabilities. Some specific scenarios for JFACC afloat considerations:

> Scenario One. Operations are planned against an island nation being defended by the nearest country claiming sovereignty. Some issues:
>
> 1. No local support basing is likely.
>
> 2. Land-basing of tactical aircraft greater than 400 nautical miles from the objective reduces sorties available and increases support required for tanker aircraft.
>
> 3. Establishing exclusion zones or sea/air interceptions will probably be the main objective for the first 30 days.
>
> 4. An amphibious assault or Special Operating Force (SOF) will likely be considered to obtain initial objectives.
>
> 5. Support will be required from long range Navy and Air Force aircraft for maritime patrol, surveillance, and tanking.

Examples of this scenario would be:

a. A Falklands or Grenada-like operation where the square mileage of the island was relatively small.

b. A Haiti or Cuban-sized operation with a larger area involved.

One disadvantage for the JFC would be the transit time required for an LCC to arrive on station. These few days may be critical for establishing initial objectives with his component commanders, but the long term command and control benefits from a ship close to the operation would be beneficial.

Scenario Two. Operations are planned against a peninsular nation with a neighbor that will not support coalition forces. Issues:

1. Land-basing for command and control may not remain secure due to rapid troop movements.

2. A Naval task force can be positioned to conduct Non-combat Evacuation Operations (NEO) for extraction of forces or civilians which requires SOF assistance.

3. Escalation of combat operations to protect a neighboring country will require JFC/JFACC transition ashore once ground forces establish a secure area.

4. Multiple CVBG's can be employed in supporting roles or the same roles for round-the-clock operations.[20]

Examples of this scenario would be:

a. A North Korean attack on Seoul which causes a loss of command and control of U.S. forces in South Korea. A sea-based JFACC could provide a rapid means of tasking battlegroup aircraft in support of ground forces if all U.S. bases become threatened.

b. A Southeast Asian country which attacks down the Malaysian peninsula and threatens the island of Singapore.

[20] CNO Briefing slides.

c. A Central American country that engages a neighboring country or is involved in a civil unrest which requires NEO.

Scenario Three. Operations are planned against a coastal country whose neighboring countries are hostile or neutral to coalition forces. Issues:

1. Few countries in the world are capable or proficient at attacking a battle or amphibious group at sea with conventional forces.

2. In the face of superior forces, a hostile nation is less likely to consider weapons of mass destruction on ships because they are difficult to target.

Examples of this scenario would be:

a. A Southeast or Southwest Asian country with a coastline less than 1500 nautical miles long. attacks a neighboring country which possesses vital U.S. economic interests.

b. An African country on the Atlantic or Indian Ocean who encroaches into a bordering country to gain access to precious raw materials important to the industrialize world.

These actions could serve to respond to U.S. interests or United Nations resolutions. An extended coastline would reduce the JFC's capability to control the enemy's sea lines of communication.

8. Conclusions

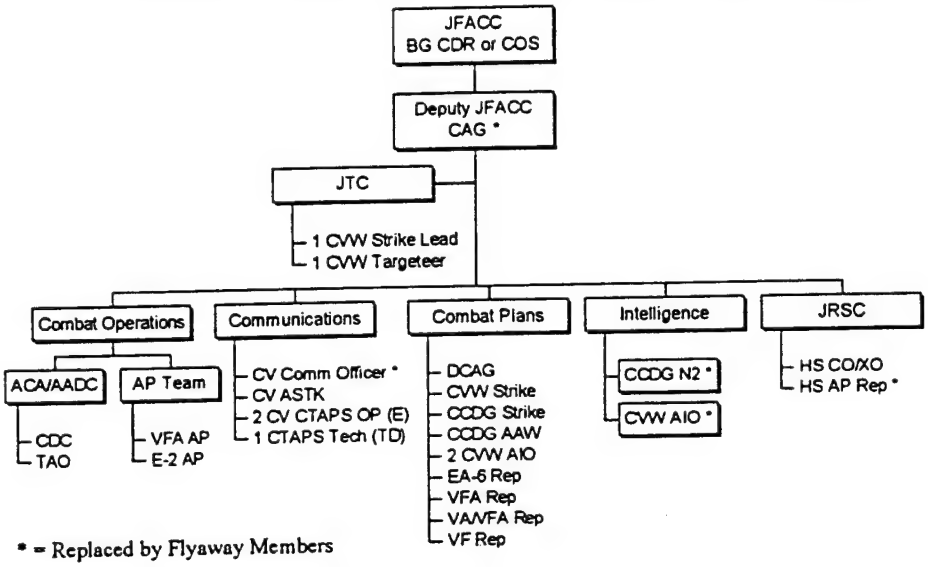
The significance that JFACC's will play in future roles that involve U.S. forces is being written into nearly every doctrinal publication involving joint air operations. With the force reductions of the early 1990's, no single service can expect to contribute to any operation's objectives without playing in a joint arena. The Navy has come a long way towards connecting to the concept of a Joint Force Air Component Commander's

responsibilities and ways of doing business. Their investment into the modification of ship's working spaces and communications equipment, training of personnel operated under a JFACC planning and execution process, and orientation of daily operations to an ATO cycle has been one of the biggest changes in carrier aviation in many years. Dedicating afloat staffs to conducting JFACC functions underway has been a big change from the days of Desert Storm where most ship's could not receive an ATO. Although the afloat JFACC concept has never been tested in any combat areas of the world, continued naval participation in large joint exercises can only improve their ability to contribute to a joint air operation.

Difficulties with the lack of space for expanded staffs will always be a boundary that naval forces will have to operate within. The problem of providing sufficient Navy personnel who can operate a JFACC's system is one that must be addressed over the long term if present trends of improvement are to continue. Further automation of a JFACC's planning tools and ways to better understand the threat of their adversary are sure to make this structured procedure easier and more responsive to a changing battle picture. A roadmap for the improvement of all of these factors has been laid out so that the Navy will be considered in the JFACC location decision in any future conflict.

Appendix A

The following JFACC information is from the Naval Doctrine Command's NWP 3-56.1 titled "Joint Force Air Component Commander Organization and Processes" (Final Draft 11 April, 1996). Actual JFACC staff assignments may vary with ship configuration and type of operation. For an explanation of abbreviations, see the glossary listed in Appendix D.



Notional CV/CVW/CVBG Core JFACC for Level I.
Figure A-1

The JTC listed in Figure A-1 is the JFACC Targeting Cell which serves to take targeting requrest from all component commanders. This group is headed by the Deputy JFACC and provides daily guidance to the tactical planning cell for targeteering, weaponeering, and strike planning.

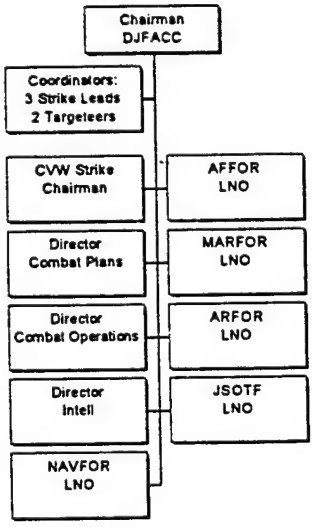
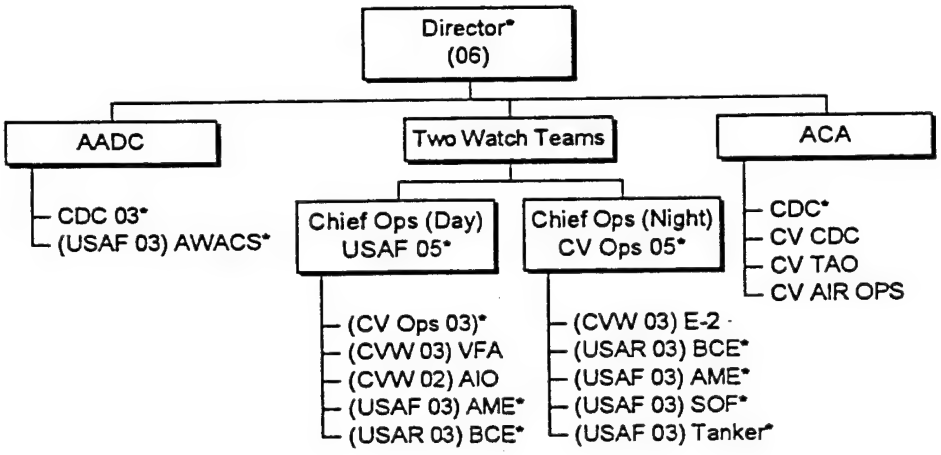


Figure A-2 JFACC Targeting Cell

The following two figures list the expanded manning for an Augmented Operations and Plans divisions for a Level II JFACC afloat. The asterisks indicate an augmented billet.



Notional CV(N) Sea-based JFACC Operations Division
Figure A-3

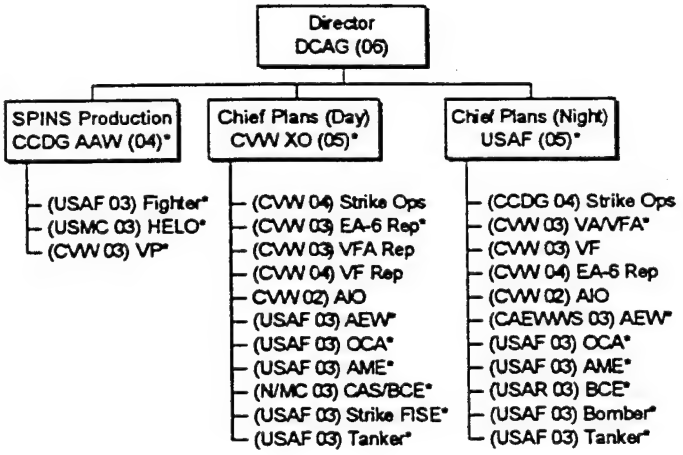
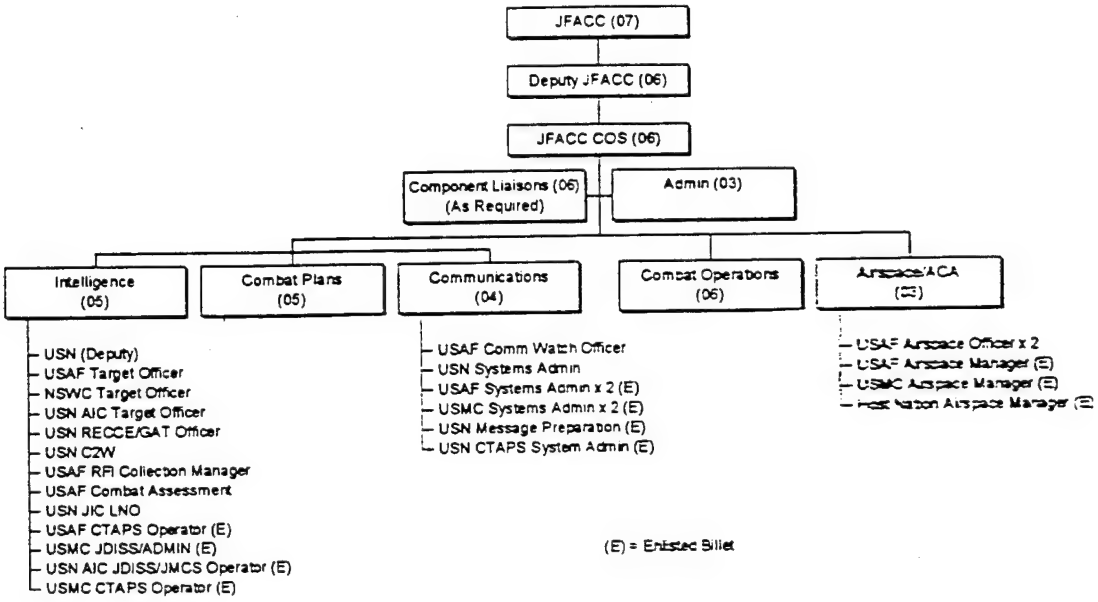


Figure A-5. Notional CV/CVN Sea-Based JFACC Organization - Plans
* = Flyaway JFACC Augmentation

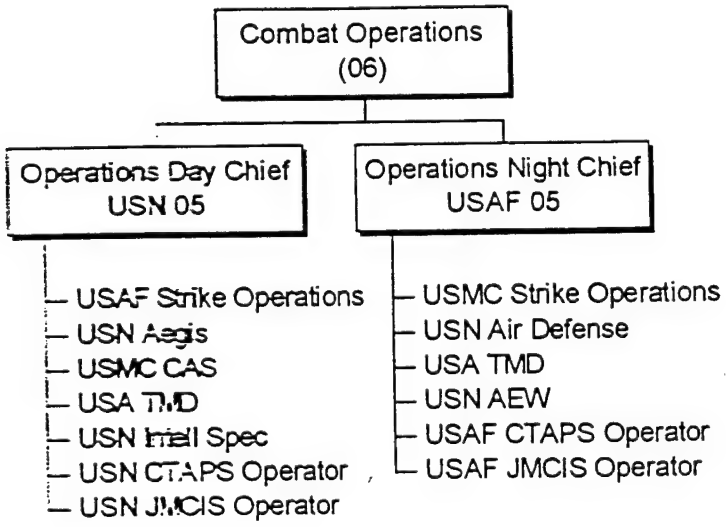
Notional CV(N) Sea-based JFACC Plans Division
Figure A-4

Appendix B

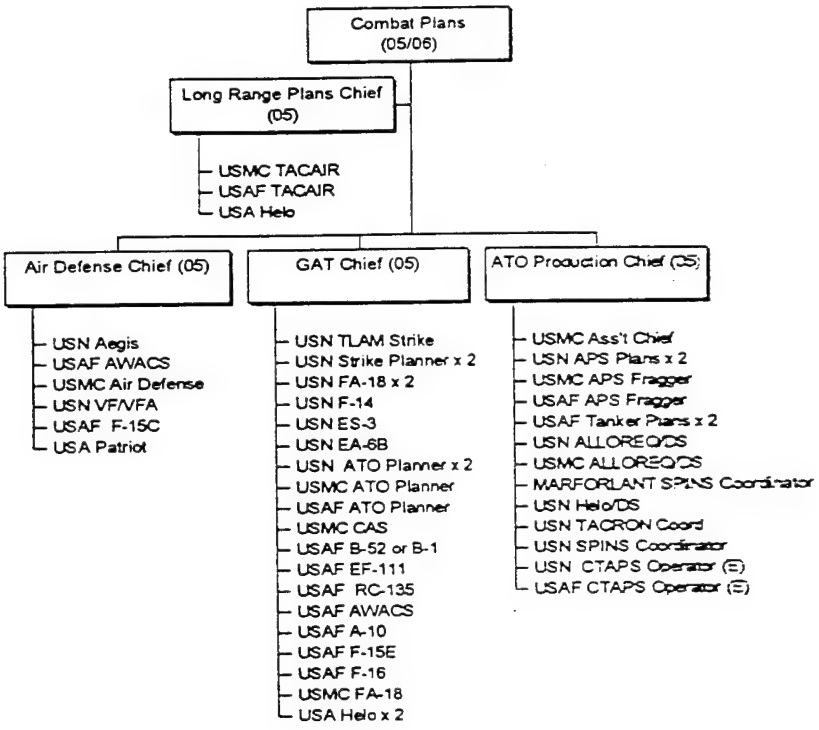
The following information from NWP 3-56.1 indicates the command structure of a Level III JFACC on a Cmmand and Cntrol ship (LCC).



Notional Sea-Based JFACC Manning for an LCC
Figure B-1



Notional Operations Division For an LCC JFACC
Figure B-2



Notional Plans Division for an LCC Sea-Based JFACC
Figure B-3

Appendix C

Shipboard Requirements for Sea-Basing of JFACC's from NWP 3-56.1:

1. A Contingency Theater Automated Planning System (CTAPS) that can operate as a host computer for authoring ATO's.

2. Trained operators and database managers for all software planning tools. These include:

Airspace Deconfliction System (ADS) used to schedule and deconflict friendly use of airspace.

Rapid Application of Air Power (RAAP) used to house Intelligence data bases, select a JIPTL, and weaponeer targets.

Automated Planning System (APS) used to schedule strike assets against the JIPTL as well as tanking, fighter, and SEAD assets.

Computer Aided Force Management System (CAFMS) used to disseminate and monitor the execution of the ATO.

3. SHF communication equipment with sufficient capacity to meet a JFACC's communication needs (64K minimum).

4. Available workspace for all JFACC divisions.

5. Accommodations for all augmentees

6. An ability to function in multiple theaters during a deployment.

7. Capability to develop and transmit an ATO to other members of the battle group and units ashore.

8. The ability to smoothly transfer JFACC operations to other platforms or facilities while continuing to conduct operations.

Appendix D

List of Abbreviatons

AADC	Area Air Defense Commander
AAW	Anti-Air Warfare
AADP	Area Air Defense Plan
ACA	Airspace Control Authority
AEW	Airborne Early Warning
AFLA	Air Force Liaison Element
AIO	Air Intelligence Officer
AIRSUPREQ	Air Support Request
ALLOREQ	Air Allotment/Request
AME	Air Mobility Element
AO	Area of Operations
AOA	Amphibious Objective Area
APS	Advanced Planning System
ARFOR	Army Forces
ARG	Amphibious Readiness Group
ASTK	Assistant Strike Operations Officer (CV)
ATO	Air Tasking Order
AWACS	Airborne Warning and Control System
BCE	Battlefield Coordination Element
BDA	Battle Damage Assessment
C2	Command and Control
CAFMS	Computer Assisted Force Management System
CAS	Close Air Support
CCG	Commander, Carrier Group
CCDG	Commander, Cruiser-Destroyer Group
COS	Chief of Staff
CSAR	Combat Search and Rescue
CTAPS	Contingency Theater Automated Planning System
CVBG	Carrier Battle Group
CVW	Carrier Air Wing
DCA	Defensive Counterair
EA-6B	Carrier-based jet aircraft for electronic countermeasures
GAT	Guidance, Apportionment, and Targeting
JSRC	Joint Search and Rescue Center
JTC	JFACC Targeting Cell
JTCB	Joint Targeting Coordination Board
JTL	Loint Target List
LNO	Liaison Officer
MAAP	Master Air Attack Plan
MARLO	Marine Liaison Officer

NEO	Noncombatant Evacuation Operation
OCA	Offensive Counterair
OOB	Order of Battle
RECCE	Reconnaissance
SAR	Search and Rescue
SEAD	Suppression of Enemy Air Defenses
SOF	Special Operations Forces
SPINS	Special Instructions
TAOC	Tactical Air Operations Center
TMD	Theater Missile Defense
VF	Fighter Squadron (F-14)
VFA	Strike Fighter Squadron (FA-18)
XO	Executive Officer

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